

Meteor Shower connected with Biela's Comet. By the Rev. S. J. Perry, F.R.S.

The evening of November 27 was unfortunately cloudy at Stonyhurst, but it was cloudless until past midnight on the following day, and three observers kept a close watch for the meteors from 9.30 to 11.30, two of them remaining until 2 A.M. Fifty meteors were recorded, nine or ten of which radiated from the point R. 24° , $\delta +41^\circ$, and three other radiant in *Cygnus*, *Perseus*, and *Taurus*, were each fairly marked by four or five meteors. Those from *Andromeda* were of the 3rd or 4th magnitude, and were nearly all seen from 10.35 to 10.47, and from 12.20 to 12.27.

A note just to hand from Malta, gives the following account of the observations made of the meteor stream on the 27th, at St. Julian's Bay, by the Rev. J. Scoles, S.J., director of the Observatory.

"There was a fine display of meteors last night (27th), beginning as soon as dusk set in, attaining a maximum apparently about 7 P.M., and still continuing at 10 P.M. Radiant point very distinct in *Andromeda*, R.A. 21° , N.P.D. 46° approximately. Some of the trails very bright, and remaining visible in some cases for half a minute afterwards. Many were visible for a quarter of a minute. The uniformity of velocity in groups was very remarkable."

Stonyhurst Observatory:
1885, Dec. 8.

Notes on the Meteorites of November 27, 1885, as seen at East Tisted Rectory, Alton, Hants. By Rev. F. Howlett.

A few hours in anticipation of the time indicated in the notice so opportunely published by Dr. Copeland of Lord Crawford's Observatory at Dun Echt, the expected flight of meteorites so mysteriously connected with the orbit of the vanished comet of Biela was seen here for a limited time in great magnificence from about 6^h to 7^h 15^m on Friday evening, November 27, whilst the sky was fairly free from clouds.

The meteorites appeared in such multitudes, in greater or less frequency, that it was simply hopeless for any single observer to attempt correctly to count them, as they radiated from near γ *Andromedæ*, as was predicted, to all parts of the heavens, but chiefly, as it seemed to me, affecting the regions contiguous to *Pegasus*, *Cygnus*, and *Hercules*; though this impression may have been only illusory, and dependent upon the circumstance that the sky was generally clearer in those quarters than in others.

I should certainly say that, though perhaps on the whole not

H.

so brilliant as were the *Leonids* of November 13–14, 1866, yet that they were decidedly more numerous. For whilst with the aid of one assistant, at the date just mentioned, I was enabled to estimate their apparition during the eight minutes (only) of the richest part of the shower, at 200 per minute, from 1^h 2^m to 1^h 10^m A.M. (see *Report of British Association* for 1867, p. 390), I should say that continuously almost, from 6^h to 7^h P.M. on Friday last, they were relatively fully 250 per minute.

A few that burst into view very close to γ *Andromedæ* appeared, as would necessarily be the case, almost if not quite stationary, but presenting sometimes a mass of luminous vapour fully half a degree sometimes in extent. All were of a white colour, and many left trains behind them for a few seconds of a ruddy and greenish hue. Unfortunately, after 7^h 15^m P.M., the sky became almost completely obscured by clouds and mist, though about 8 P.M. I could still perceive, through some partial breaks in the vapours, that the glorious pageant was still proceeding.

Watching for about a quarter of an hour on the following evening, November 28, with a perfectly clear sky from about 6^h to 6^h 15^m I only saw three meteors—of which the largest, equal in brilliancy to a star of the 1st magnitude, shot from near ϵ *Arietis* to a point midway between *Alpherat* and *Algenib*, quite another radiant therefore from that of November 27.

I imagine my estimate of the numbers seen on the day last mentioned will be questioned by some observers, but none the less should I maintain my opinion respecting them.

Meteoric Display, November 27, 1885.

By Colonel M. F. Ward.

The sky at the time had light clouds towards the south, but was intensely clear, and became suddenly alive with meteors falling to all points of the horizon from the small star χ *Andromedæ* (Proctor's map), with a slow motion, giving very much the idea of flakes of snow falling in a dead calm.

Some were very minute—barely visible—others as large as *Jupiter* or *Venus*. The latter travelled rapidly, leaving luminous streaks in their path, lasting in some cases more than half a minute—long enough to trace their direction to the above-named star.

Great numbers—and these of considerable size but of slow motion—came into view within a degree or two only of the horizon.

After 7.30 they diminished gradually in number. The sky clouded from 8 to 9.30, but the meteors were still seen in the intervals between the clouds.

At 9.30, sky again cloudless. Meteors still falling, though